REMARKS

Claims **1-30** and **35-36** have been previously cancelled. Claims **31-34** and **37-39** are pending. Claims **31-34** and **37-39** have been amended to recite "coil" instead of "coil circuit" and to incorporate additional amendments to improve clarity. (Emphasis added.) However, no new matter is introduced.

First Rejection Under 35 U.S.C. § 102(e)

Claims **31-34, 38** and **39** are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Pat. No. 7,034,468 to Kim et al. (hereinafter "Kim") for the reasons noted at pages 3-4 of the Office Action. In particular, the Office Action equates "coil circuit" to include, for example, the combination of elements Css, 120, 130, L and Cs (e.g., of Fig. 3 of Kim) rather than just to element L as a basis for the rejection. (Emphasis added.) Accordingly, Applicants have amended the term "coil circuit" to recite "coil" so as to clearly signify that the combination of elements - Css, 120, 130, L and Cs (of Kim) are not encompassed by the term "coil" according to the Examiner's interpretation of "coil circuit." (Emphasis added.) Thus, Applicants now reiterate their remarks and comments made in their prior Amendment (filed April 30, 2007) and apply them to the amended claim term "coil" as opposed to the term "coil circuit." (Emphasis added.)

Thus, to expedite prosecution, Applicants respectfully direct the Examiner's attention to claim **31** reciting "the energy is stored in the coil . . . ." and to the other recitations of "coil" instead of "coil circuit." (Emphasis added.) Also, Applicants point out that claims **32-34, 38** and **39** (ultimately depending from claim **31**) include the same language by virtue of their dependency.

The "energy . . . stored in the coil" refers to "the energy stored in the capacitive load" of the electrodes of the display panel (e.g., PDP) as recited in the rejected claims. (Emphasis added.) Furthermore, "when the energy stored in the capacitive load is discharged, the energy [of the capacitive load discharge] is stored in the coil" also as recited in rejected claim **31**. (Emphasis added.) Also, claim **31** recites that the stored energy is "retained in the coil." The same language is recited in dependent claims **32-34, 38** and **39** by virtue of their dependency on base claim **31**.

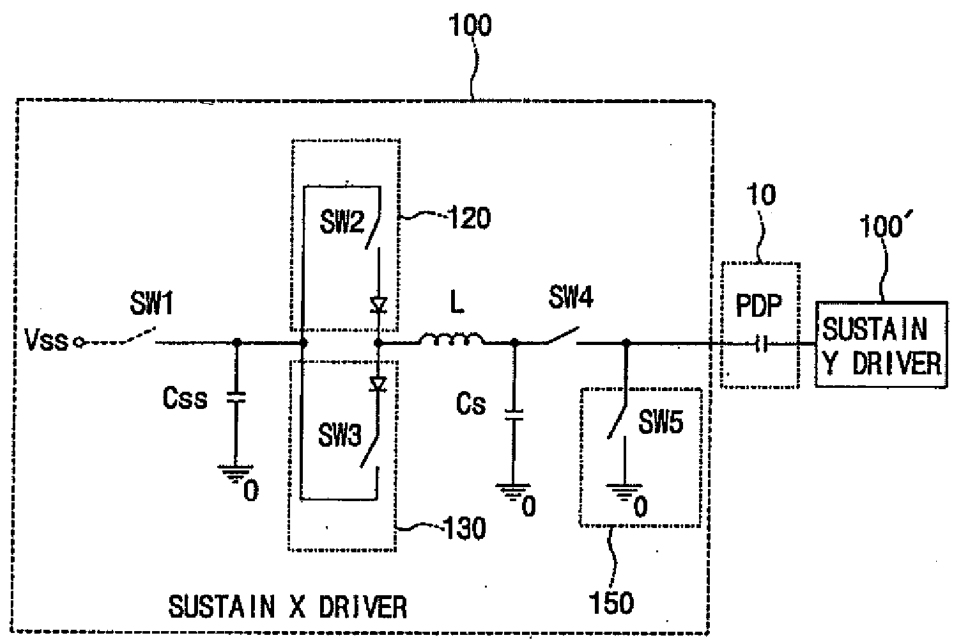
In that context, Applicants respectfully submit that the Office Action cannot therefore properly assert/conclude that Kim discloses a coil "L" (in Fig. 3 of Kim) which stores and retains

the stored energy associated with the capacitive load (of PDP[1] 10 of Kim) as noted in further detail below.

Applicants respectfully state that any interpretation/assertion/conclusion that - - when the capacitive load is discharged, that energy is stored in the coil L and retained in the coil L - - cannot stand based on the bare structure of Fig. 3 (of Kim) itself – as will be readily apparent in view of the disclosure relating to Fig. 3 (of Kim) as noted below.

For the Examiner's convenience, Fig. 3 (of Kim) is reproduced:

FIG.3



With regard to Fig. 3 (of Kim), Applicants respectfully direct the Examiner's attention to text (at cols. 3-4, from col. 3, line 62 to col. 4, line 34, of Kim) reciting in relevant part:

> As shown in FIG. 3 [of Kim], a preferred driving circuit 100 of **the present invention** comprises a storage capacitor Css, an intermediate capacitor Cs, a resonance inductor L, a charging part 120, and a switch SW4. [(Emphasis added.)]
>
> The operation of the circuit for charging the panel capacitance is explained in detail below. The storage capacitor Css is a source that supplies charge to the panel capacitance. In addition, **the storage**

[1] "PDP" refers to plasma display panel.

> **capacitor Css restores the charge recovered from the panel capacitance** [i.e., referring to the capacitive load of PDP 10]. First, the storage capacitor Css is connected to the voltage source Vss through a first switch SW1 and is charged with more than half of the minimum sustain voltage. Next, the charge in the storage capacitor Css is transferred into the intermediate capacitor Cs through the resonance inductor L following the charging switch SW2 in the charging means 120 being turned on. By LC resonance of the resonance inductor L and the intermediate capacitor Cs, the intermediate capacitor Cs is charged to the voltage about twice as much as the voltage source Vss. Then, by turning on the switching means SW4, the intermediate capacitor Cs is connected to the panel and supplies the charge to the panel capacitance. As the panel capacitance is charged, the voltage across the panel capacitance increases and, consequently, the sustain discharge is fired. Using the driving circuit of the invention, once discharge has begun, the supply of charge is limited by the charge stored in the intermediate capacitor Cs. Accordingly, the excessive flow of discharge current is limited, thereby, increasing the energy efficiency. [(Emphasis added.)]
>
> Besides, for operation of the circuit during the decrease of the voltage across the panel, the charge recovery means 130 and the clamping means 150 should be further included. The operation of the circuit during the decrease of the voltage across the panel is described below. **After the sustain discharge is completed, by turning on the charge recovering switch SW3 in the charge recovery means 130, the charge stored in the panel capacitance is recovered to the storage capacitor Css through the resonance inductor L**. At this time, the clamping switch SW5 included in the clamping means 150 is turned on and the voltage of the side of the panel is grounded. [(Emphasis added.)]

The foregoing quoted text relating to Fig. 3 (of Kim) clearly indicates **(1)** that the resonance inductor (L) is used to charge the storage capacitor (Css) and to charge the intermediate capacitor (Cs) and **(2)** then after the sustain discharge is completed, energy of the capacitive load of PDP (10) is "**recovered to the storage capacitor Css through the resonance inductor L**" as expressly stated above. (Emphasis added.)

Thus, the energy of the capacitive load of PDP (10) (of Kim) is stored and retained in the storage capacitor (Css) rather than in coil (L). Concurring with the same (and contrary to the assertion/conclusion of the Office Action), the first paragraph of the above-quoted text (of Kim) also emphasizes that "**the storage capacitor Css restores the charge recovered from the panel capacitance**." (Emphasis added.) As such, the coil (L) (of Kim) does not store and retain the "charge recovered from the panel capacitance" of PDP (10) as asserted/concluded in the Office Action.

Even more specifically, the above-quoted text relating to Fig. 3 (of Kim) indicates that the storage capacitor (Css) is charged by voltage source (Vss) by turning on switch 1 (SW1). Thereafter, switch 2 (SW2) of charging part (120) is turned ON to direct the energy of storage capacitor (Css) through the unidirectional diode (of charging means (120)) and through resonance inductor (L) to charge intermediate capacitor (Cs). Then, after PDP (10) has completed the sustain discharge, the PDP (10) capacitance energy is recovered via recovery means (130) by turning ON switch 3 (SW3) in order to transfer energy from PDP (10) through switch 4 (SW4), through resonance inductor (L), through recovery means (130) via the unidirectional diode thereof and via switch 3 (SW3) and ultimately into storage capacitor (Css).

So, with regard to the assertion/conclusion in the Office action that the capacitive load of PDP (10) (of Kim) is stored (and retained) in the coil circuit (L) thereof, the actual disclosure (of Kim) directly contradicts that assertion/conclusion because the PDP 10 capacitive load energy (of Kim) is stored in the storage capacitor (Css) rather than being stored in the coil (L).

Thus, Applicants respectfully submit that Kim does not disclose or teach the feature that the "energy[2] is stored in the coil" and "retained" therein as recited in the rejected claims. (Emphasis added.) Therefore, Kim does not disclose or teach each and every feature of the rejected claims and does not anticipate the rejected claims.

Moreover, claim **31** was previously amended to incorporate the language of claim **35** (previously cancelled). Specifically, in claim **31**, energy to be stored in the "coil" flows from the capacitive load of the panel via electrodes (e.g. X, Y or address) and the energy stored in the "coil" is supplied to the capacitive load of the panel via the same kind of electrodes. (Emphasis added.) According to amended claim **31** (and claims **32-34, 38** and **39** ultimately depending therefrom), energy recovery for capacitive loads between address electrodes and scan electrodes can be realized wherein capacitive load energy is stored in the "coil" and recovered from the "coil." (Emphasis added.) These feature(s) are not taught or disclosed by Kim as claimed.

For at least the foregoing reasons, Applicants respectfully submit that claims **31-34** and **38-39** are patentably distinguished over the disclosure of Kim. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims **31-34, 38** and **39** as being anticipated by Kim under 35 U.S.C. §102(e).

---

2 The "energy" refers to that associated with the discharge of the capacitive load of the display panel.

<u>Second Rejection Under 35 U.S.C. §102(e)</u>

Claims **31,** and **37-39** are rejected as being anticipated by U.S. Pat. No. 6,922,180 to Iwami, et al. (hereinafter "<u>Iwami</u>") for the reasons noted at pages 5-7 of the Office Action. In particular, the Office Action, <u>equates</u> any one of the combinations of **(1)** L1, D1, L2, D2, and C1 or **(2)** L3, D3, L4, D4, and C4 or **(3)** L5, D5, D7, L6, D8, and C3 with the term "<u>coil circuit</u>." (Emphasis added.)

To expedite prosecution, Applicants have amended the term "coil circuit" to the term "<u>coil</u>" so as to prevent such above-noted equivocation recited in the Office Action.

(Emphasis added.) In view of the same, Applicants respectfully direct the Examiner's attention to Fig. 2 (of <u>Iwami)</u> described in <u>Iwami</u> (at paragraphs 17-38 at cols. 3-6 thereof). (Emphasis added.)

For the Examiner's convenience, Fig. 2 (of <u>Iwami</u>) is reproduced below.

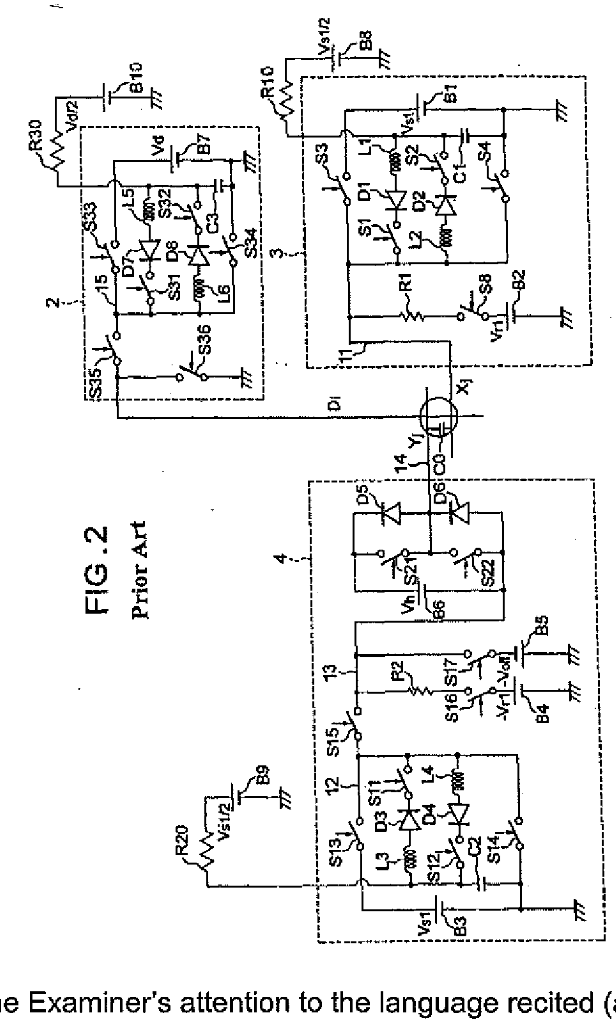


FIG. 2
Prior Art

Applicants also direct the Examiner's attention to the language recited (at col. 5, lines 46-48, of <u>Iwami)</u> reciting in relevant part:

> whereupon a <u>current flows into the capacitor **C1**</u> from the electrode X_j <u>through the coil **L2**, the diode **D2** and a switching element **S2**</u> due to the <u>charges accumulated in the capacitor **C0**</u>. [(Emphasis added.)]

Note that the capacitance load contained in the capacitor (C0) is that associated with the address electrodes (A) and the scan electrodes (X and Y) of <u>Iwami</u>. When the energy of the capacitor (C0) is to be recovered, <u>Iwami</u> clearly explains that the current flows into the capacitor (C1) via coil (L2), diode (D2) and switch (S2) as indicated in the above-quoted language (i.e., "whereupon a <u>current flows into the capacitor **C1** from</u> the electrode X_j <u>through the coil **L2**</u>, the <u>diode **D2**</u> and a <u>switching element **S2**</u> due to the <u>charges accumulated in the capacitor **C0**</u>"; emphasis added.) Thus, the orientation and operation of coil (L2), diode (D2) and switch (S2) facilitate the transfer of energy <u>into</u> capacitor (C1) <u>from</u> capacitor (C0).

Also, in the reverse direction, the orientation of coil (L1), diode (D1) and switch (S1) facilitate transfer of energy <u>into</u> capacitor (C0) <u>from</u> capacitor (C1). <u>Iwami</u> corroborates the same by the language reproduced below (in relevant part):

> whereupon a <u>current reaches</u> the electrode X_j <u>through coil L1, the diode D1, and the switching element S1</u> due to <u>charges accumulated in capacitor C1</u>, and the <u>current flows into the capacitor C0</u>, <u>whereby</u> the <u>capacitor C0 is charged</u>. [(<u>Iwami</u> at col. 5, lines 32-36; emphasis added.)]

Similarly, the orientation and operation of coil (L4), diode (D4) and switch (S12) facilitate transfer of energy <u>into</u> capacitor (C2) <u>from</u> capacitor (C0):

> Subsequently, . . . the <u>switching element S12 is switched ON</u>, and . . . . <u>Consequently, a current flows into capacitor C2</u> from electrode Y_j <u>through . . . the coil L4, the diode D4, and the switching element S12</u> due to <u>charges accumulated in the capacitor C0</u>. [(<u>Iwami</u> at col. 6, lines 11-17; emphasis added.)]

Also, in the reverse direction, the orientation of coil (L3), diode (D3) and switch (S11) facilitate transfer of energy <u>into</u> capacitor (C0) <u>from</u> capacitor (C2):

> However, . . . <u>when the switching element S11 is switched ON</u>, a <u>current reaches</u> the electrode Y_j <u>through coil L3, the diode D3, the switching element S11</u>, . . . due to <u>charges accumulated in the capacitor C2</u>, and <u>current flows into the capacitor C0</u>, <u>whereby capacitor C0 is charged</u>. [(<u>Iwami</u> from col. 5, line 63 to col. 6, line 2; emphasis added.)]

Also, likewise, the orientation and operation of coil (L6), diode (D8) and switch (S32) facilitate transfer of energy <u>into</u> capacitor (C3) <u>from</u> capacitor (C0). And, in the reverse direction,

the orientation of coil (L5), diode (D7) and switch (S31) facilitate transfer of energy into capacitor (C0) from capacitor (C3).

When energy is transferred out of capacitor (C0), that energy is not stored and retained in the coils (L1), (L2), (L3), (L4), (L5) or (L6) of Fig. 2 (of Iwami). Accordingly, it is absolutely clear that energy is not stored and retained in the coils of Fig. 2 (of Iwami). Rather, that energy it is stored and retained in capacitors (C1), (C2) or (C3) of Fig. 2 (of Iwami). The coils (of Iwami) aid in the transfer of energy either into (C0) or out of/from (C0).

Moreover, Applicants respectfully direct the Examiner's attention to further relevant text (of Iwami) reproduced below:

> As has been described, according to the present invention it is **possible to charge the power collecting capacitive element**, which is included in the resonance driver in a light-emitting display panel driving apparatus having a capacitive load, to a predetermined potential almost concurrently with the power-up of the apparatus through excitation by the resonance driver. Hence, it is possible to drastically **shorten a time required to display an image by shifting** to the normal display **driving sequence** since the power-up of the driving apparatus. [(Iwami at col. 11, lines 32-41; emphasis added.)]

The foregoing quotation relates to charging the power collecting capacitive elements (C1), (C2), and (C3) (of Iwami) so as to "shorten a time required to display an image by shifting . . . the driving sequence . . . ." (Emphasis added.) Thus, the focus of Iwami is not directed to storing and retaining energy discharged from capacitor (C0) into coils (L1), (L2), (L3), (L4), (L5) or (L6) thereof – but rather to "shorten a time required to display an image" as noted above. Accordingly, Iwami does not teach, or disclose storing and retaining energy in any of the coils (L1), (L2), (L3), (L4), (L5) or (L6) of cited Fig. 2 (of Iwami).

The foregoing remarks and deficiencies of the disclosure of Iwami also apply to Figs. 5-6 thereof because Iwami indicates that Fig. 5 (of Iwami) is essentially the same as Fig. 2 (of Iwami) in view of the statement:

> The **circuitry shown in FIG. 5 omits** the charge circuits (power sources B8 through B10 and the resistors R10, R20, and R30) for the **power collecting capacitors (C1 through C3)** in their respective resonance drivers activated upon power-up **from the circuit arrangement of FIG. 2**, and **because the other arrangements are the same**, an explanation of each portion in the circuit is omitted. [(Iwami at col. 8, lines 23-30; emphasis added.)]

Even with regard to Fig. 5 (of Iwami), the capacitors (C1), (C2), and (C3) thereof are referred to as the "power collecting capacitors (C1 through C3)" in agreement with the point that the coils

(L1), (L2), (L3), (L4), (L5) or (L6) (of Iwami) are not where energy is stored and retained as discussed above. (Emphasis added.)

For at least these reasons, Applicants respectfully submit that Iwami fails to disclose or teach each and every element recited in Applicants' rejected claims – for example, the feature(s) that "the energy is stored in the coil" and "retained" therein as recited in rejected claims **31** and **37-39.** (Emphasis added.)

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims **31,** and **37-39** as being anticipated under 35 U.S.C. §102(e) over Iwami.

Conclusion

Applicants respectfully submit that the claims (as amended) are patentable and request a written indication of the same.

If any issues remain to be resolved, the Examiner is earnestly requested to contact the undersigned attorney in order to promptly resolve any such issues and to expedite prosecution.

No additional fees are believed to be due. However, if any additional fees are requires or an overpayment of fees made, please debit or credit our Deposit account No. 19-3935, as needed.

Respectfully submitted,

STAAS & HALSEY LLP

Date: Thursday, December 13, 2007

By: Ajay Pathak

AjayPathak
Registration No. 38,266

1201 New York Avenue, N.W., 7th Floor
Washington, D.C. 20005
Direct: (202) 454-1594
Telephone: (202) 434-1500 (main)
Facsimile: (202) 434-1501